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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,672	03/09/2004	Young-pil Kim	5649-1276	3015

7590 01/23/2007  
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EXAMINER
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LANDAU, MATTHEW C

ART UNIT	PAPER NUMBER
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2815

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/23/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/796,672

Applicant(s)

KIM ET AL.

Examiner

Matthew Landau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 and 43-46 is/are pending in the application.
- 4a) Of the above claim(s) 8 and 10-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7, 9, 43, 45 and 46 is/are rejected.
- 7) ☒ Claim(s) 5, 6 and 44 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

Claims 8 and 10-16 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on January 9, 2006. Claims 17-42 have been cancelled.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 45 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 45 recites the limitation "the fourth contact plug". There is insufficient antecedent basis for this limitation in the claim. It is suggested Applicant amend claim 45 to depend from claim 6.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 1-4, 7, 9, 43, and 46 are rejected under 35 U.S.C. 102(b) as being anticipated by Takeuchi (US PgPub 2003/0001179).

Regarding claim 1, Figures 1-6 of Takeuchi disclose a semiconductor device, comprising: a test pattern ("MONITOR AREA") (Figure 1) that includes: a word line 5 on a semiconductor substrate 1; an active region comprising a first impurity doped region 3 (Fig. 6) and a second impurity doped region 3 (Fig. 5). Note that the active region is considered to be the active region shown in the middle of the monitor area as shown in Figure 1 (active region between lines 11a and 11c). Figures 1-6 of Takeuchi further disclose a first contact pad 9b (Fig. 6) electrically connected to the first impurity doped region, the first contact pad having a first region that covers the first impurity doped region and a second region (over insulating region 2) that is offset from the first impurity region; a first bit line 11c electrically connected to the first contact pad 9b; a second contact pad 9a (Fig. 5) electrically connected to the second impurity region; a second conductive line 11a electrically connected to the second contact pad; and a first probing pad 11d electrically connected to the first bit line; and a second probing pad 11b electrically connected to the second conductive line (paragraph [0112]). Note that line 11c can be considered a bit line since it is connected to a source/drain region of a cell transistor. Whether or not the line functions as a bit line is a matter of intended use. Therefore, the limitation "bit line" amounts to a recitation of intended use that does not structurally distinguish the claimed invention over the prior art. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

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Regarding claim 2, Figures 1-6 of Takeuchi disclose a first contact plug (in hole 10a) that penetrates a first insulation layer 10 between the first contact pad 9b and the first bit line 11c (Fig. 6), the first contact plug electrically connecting the first contact pad to the first bit line; and a second contact plug that penetrates the first insulation layer, the second contact plug (in hole 10a) that penetrates the first insulation layer (Fig. 5), the second contact plug electrically connecting the second contact pad 9a to the second conductive line 11a.

Regarding claim 3, Figures 1 and 6 of Takeuchi disclose the first contact pad 9b is one of a plurality of discrete first contact pads 9b disposed between the word line 5 and a second word line 5. Note that each "MT" as shown in Figure 1 has a contact pad 9b.

Regarding claim 4, Figures 1 and 6 of Takeuchi disclose an insulating pattern 8 that electrically insulates each of the plurality of the discrete first contact pads from one another.

Regarding claim 7, Figure 5 of Takeuchi discloses the second doped region 3 is one of a plurality of second doped regions (the two doped regions below pad 9a) disposed between the word line and a second word line, and wherein the second contact pad extends in a continuous line between the word line and the second word line to electrically connect to the plurality of second impurity doped regions.

Regarding claim 9, Figure 1 of Takeuchi discloses the second conductive line 11a is perpendicular to the word line 5.

Regarding claim 43, Figure 1 of Takeuchi discloses the first bit line 11c is laterally offset from the first and second impurity regions 3.

Regarding claim 46, Figure 6 of Takeuchi discloses the first bit line 11c is over the second region of the first contact pad 9b.

***Allowable Subject Matter***

Claims 5, 6, and 44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 45 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 5, the prior art of record, either singularly or in combination, does not disclose or suggest the combination of limitations including a third contact plug between the first bit line and the first probing pad that electrically connects the first bit line and the first probing pad.

Regarding claim 6, the prior art of record, either singularly or in combination, does not disclose or suggest the combination of limitations including a fourth contact plug between the second conductive line and the second probing pad that electrically connects the first bit line and the first probing pad.

***Response to Arguments***

Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew C. Landau whose telephone number is (571) 272-1731.

The examiner can normally be reached from 8:30 AM - 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Parker can be reached on (571) 272-2298. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and (571) 273-8300 for After Final communications.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should any questions arise regarding access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Matthew C. Landau

January 12, 2007